

研究报告

Two New Species of Freshwater Shrimps from Hunan Province, China (Decapoda: Atyidae: Caridina)

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Abstract: Two new freshwater atyid shrimps, *Caridina angustipes* sp.nov. and *C. clavipes* sp.nov. from Hunan Province, China are described. *C. angustipes* sp.nov. is similar to *C. baojingensis* Guo, He et Bai, 1992, but with longer rostrum, 15~27 dorsal teeth, 3~6 ventral teeth, and straighter inner margin of endopods in male 1st pleopods. *C. clavipes* sp.nov. is similar to *C. angustipes*, but with narrower distal and fewer spines on inner margin of endopods in male 1st pleopods, and shorter and thinner appendix masculina in male 2nd pleopods with only 1 spine on inner lateral margin and 4 spines in apex. The holotypes are deposited in Shanghai Fisheries University. Some representative paratypes are deposited in Foshan Science and Technology College.

Key words: Decapoda; Atyidae; *Caridina*; New species; Hunan; China

湖南淡水虾类两新种 (十足目: 匙指虾科: 米虾属)

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摘要: 报道湖南省淡水匙指虾科米虾属两新种。窄肢米虾 *Caridina angustipes* sp.nov. 与保靖米虾 *C. baojingensis* Guo, He et Bai, 1992 近似, 但新种额角长, 上缘具 15~27 齿, 下缘具 3~6 齿; 雄性第一附肢内肢的内缘平直。棒肢米虾 *C. clavipes* sp.nov. 略似窄肢米虾 *C. angustipes*, 但前者雄性第一附肢内肢末端尖细, 内缘刺少; 雄性第二附肢雄附肢短而细, 内缘仅具 1 刺, 末端仅具 4 刺。正模标本保存在上海水产大学, 副模标本保存在佛山科学技术学院。

关键词: 十足目; 匙指虾科; 米虾属; 新种; 湖南

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So far, seventeen species of *Caridina* have been reported from Hunan Province over the years (Guo et al, 1992a, b, 1996; Guo & Choy, 1994, Guo & Suzuki, 1996; Guo & Grave, 1997; Jiang et al, 2002; Liang et al, 1993; Liang et al, 1999). This study describes two additional new taxa. The holotype specimens have been deposited in Shanghai Fisheries

University (SFU), and some representative paratypes in Foshan Science and Technology College (FSTC).

1 *Caridina angustipes* sp.nov. (Fig.1: A~C)

1.1 Type materials

Holotype: ♂ (SFU, 89-05-01); allotype:

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♀ (FSTC, 89-05-02); paratypes: 3♀♀, 4♂♂ (FSTC, 89-05-03 to 09). Wentang Village, Xinhua County, Hunan Province, 400 m, 13-V-1989, collected by GUO Zhao-liang.

1.2 Description

The rostrum reaches the end of second antennular segment; armed with 15-27 dorsal teeth, of which 6-8 situated on carapace behind the orbital margin, and 3-6 ventral teeth; pterygostomian margin rounded, without pterygostomian spine (Fig. 1A). The first pereiopod reaches the base of first antennular peduncle segment; chela 1.8 times as long as wide; movable finger as long as palm, carpus 1.2 times as long as wide and excavated disto-dorsally. The second pereiopod reaches the middle of second antennular peduncle segment; slender and longer than first pereiopod; chela about 2.3 times as long as wide; movable finger 1.6 times as long as palm; carpus 4.0 times as long

as wide, about 1.2 times length of merus, slightly excavated distally. The third pereiopod reaches beyond the tip of scaphocerite; dactylus about 3.8 times as long as wide, ending in prominent claw-like spine surrounded by simple setae, with 5 spines on posterior margin behind the apical spine; propodus 3.3 times length of dactylus; merus with 4 strong spines and ischium with one spine on the postero-lateral margin. The fifth pereiopod reaches the middle of the third antennular peduncle segment; dactylus 4.1 times as long as wide, with comb-like row of 38-42 spinules on posterior margin, ending in claw-like spine surrounded by simple setae; propodus 3.1 times length of dactylus.

The endopod of the male 1st pleopods is leaf-shaped, wider proximal, about 3.1 times as long as wide; inner margin almost straight and bearing about 13 spines, outer margin slightly convex at middle,

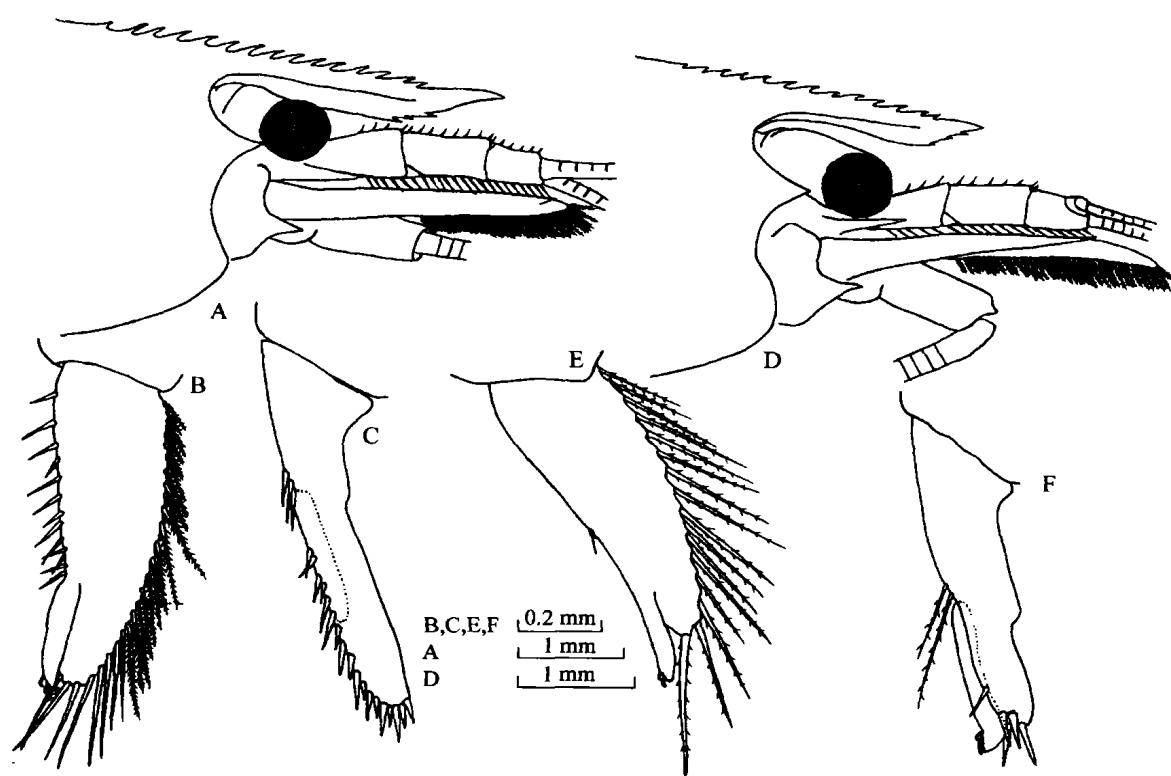


Fig. 1 *Caridina angustipes* sp. nov. and *Caridina clavipes* sp. nov.

C. angustipes: A. rostral and antennular region, B. endopod of male 1st pleopod, C. appendix masculina and appendix interna of male 2nd pleopod.

C. clavipes: D. rostral and antennular region, E. endopod of male 1st pleopod, F. appendix masculina and appendix interna of male 2nd pleopod.

Scale bars indicate 1 mm (A, D), 0.2 mm (B, C, E, F).

fringed with long plumose setae on proximal 2/3 and long simple setae on distal 1/3; appendix interna well developed, just reaching beyond tip of endopod, with cincinuli at tip (Fig. 1B). The appendix masculina of second pleopod is rod-shaped, proximal almost as wide as distal, bearing numerous short spines; appendix interna reaching about middle of appendix masculina, with cincinuli at tip (Fig. 1C). The telson is distinctly longer than sixth abdominal somite, tapering posteriorly, with round distal margin, dorsal surface with 5–6 pairs of short movable spines including the pair at postero-lateral angles; posterior margin with 4 pairs of intermedial plumose setae, of which the outer one is the longest, the middle one is longer than other pairs. Exopodite of the uropod bears a series of 13–14 spinules along the diaresis.

All specimens are light green in colour. The total length (measured from the rostral tip to the posterior margin of the telson) is 18.0–23.0 mm.

1.3 Etymology

The species name is derived from the Latin *angustius*, narrow, and *pes*, foot, in reference to the shape of endopod of male 1st pleopod.

1.4 Remarks

C. angustipes sp. nov. is very similar to *C. baojingensis* Guo, He et Bai, 1992 in the shape of the endopod of the male 1st pleopod and appendix masculina of the male 2nd pleopod. It can be distinguished from the latter by its rostrum longer being, and armed with 15–27 dorsal teeth and 3–6 ventral teeth; by the inner margin of endopod of the male 1st pleopod being almost straight.

1.5 Habitat

The type specimens were collected from a small stream at an elevation of 400 m near Wentang Village, Xinhua County (ca. 27°43' N, 110°7' E, Hunan). The stream has a rocky bed, is about 0.5–1.8 m wide and 0.2–1.3 m deep. The shrimps live under stones and among aquatic grass. The water temperature was 22 °C and pH was 7.5.

2 *Caridina clavipes* sp. nov. (Fig. 1: D–F)

2.1 Type materials

Holotype: ♂ (SFU, 90–08–01); allotype: ♀ (FSTC, 90–08–02); paratypes: 2 ♀, 2 ♂ (FSTC, 90–08–03 to 06). Wentang Village, Xinhua County, Hunan Province, 300 m, 19–VII–1990, collected by GUO Zhao-liang.

2.2 Description

The rostrum reaches the middle of second antennular segment; with 10–14 dorsal teeth, of which 2–5 situated on carapace behind the orbital margin, and 1–5 ventral teeth; pterygostomian margin rounded, without pterygostomian spine (Fig. 1D). The first pereiopod reaches the end of first antennular peduncle segment; chela 1.8 times as long as wide; movable finger shorter than palm, about 0.8 times as long as palm; carpus 1.3 times as long as wide, excavated disto-dorsally. The second pereiopod reaches about the middle of second antennular peduncle segment; slender and longer than first pereiopod; chela about 2.1 times as long as wide; carpus 3.9 times as long as wide, slightly excavated distally, movable finger about 1.5 times as long as palm. The third pereiopod reaches beyond tip of scaphocerite; dactylus about 3.7 times as long as wide, ending in prominent claw-like spine surrounded by simple setae, with 4–5 spines on posterior margin behind the apical spine; propodus 3.7 times length of dactylus. The fifth pereiopod reaches the middle of the second antennular peduncle segment; dactylus 4.8 times as long as wide, bearing comb-like row of 32–40 spinules on posterior margin ending in claw-like spine surrounded by simple setae; propodus 2.6 times length of dactylus.

The endopod of the male 1st pleopod is leaf-shaped, wider proximal and narrower distal, about 1/2 of length of exopod, and about 2.7 times as long as wide; inner margin slightly concave at middle and bearing 0–2 short spines, outer margin slightly convex, bearing long plumose setae; appendix interna well developed, with half length beyond tip of endopod (Fig. 1E). The appendix masculina of second pleopod is rod-shaped, short and thin, not reaching the middle of endopod, bearing only 1 spine on inner lateral margin and 4 spines on apex; appendix interna well

developed, reaching slightly beyond the tip of appendix masculina, with several cincinuli at tip (Fig. 1F). The telson is distinctly longer than sixth abdominal somite, tapered posteriorly, with distal margin rounded, dorsal surface with 5 – 6 pairs of short movable spines including the pair at poster lateral angles; posterior margin with 4 pairs of intermedial plumose setae, the outer one is the longest, the middle one is longer than other pairs. Exopodite of the uropod bears a series of 11 – 14 spinules along the diresis.

All specimens are light green in colour. The total length is 15.0 – 19.5 mm.

2.3 Etymology

The species name is derived from the Latin *clava*, rod, and *pes*, foot, in reference to the shape of appendix masculina of the male 2nd pleopod.

2.4 Remarks

C. clavipes sp. nov. resmbles *C. angustipes* in

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